Wisconsin Water Conservation Symposium Demand Side Strategies

Message From A Dry State

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SFPUC Facilities Overview





The Rule of Partial Creationism

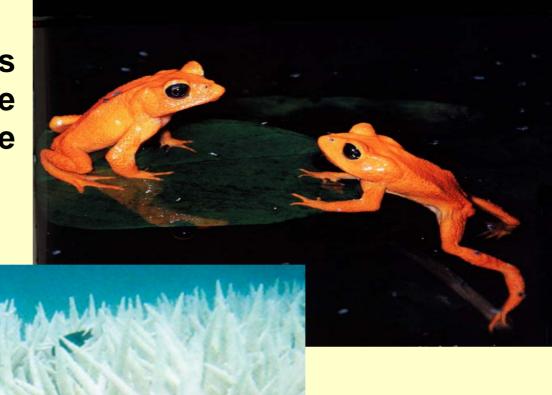
We live partly in a world we inherit, and partly in a world we create



Benchmarks

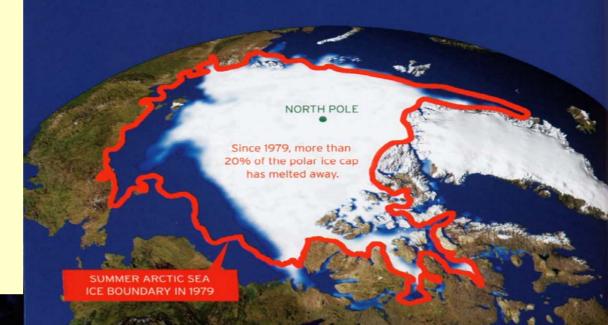
- How Much Water is Being Used?
- What's Happening with the Groundwater Table?
- What's the Quality of the Water We're Drinking?
- What's Happening to the Vegetation and Wildlife?

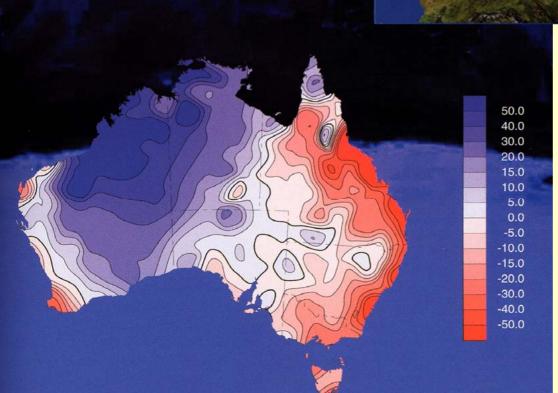
Golden toad is extinct as a result of climate change



Coral bleaching at Great Keppel Island 7

Melting Polar Ice Cap at the North Pole





Decreased rainfall in Australia





The Guarantee Rule

There's nothing you can do to guarantee a good outcome, but there's plenty you can do to guarantee a bad one

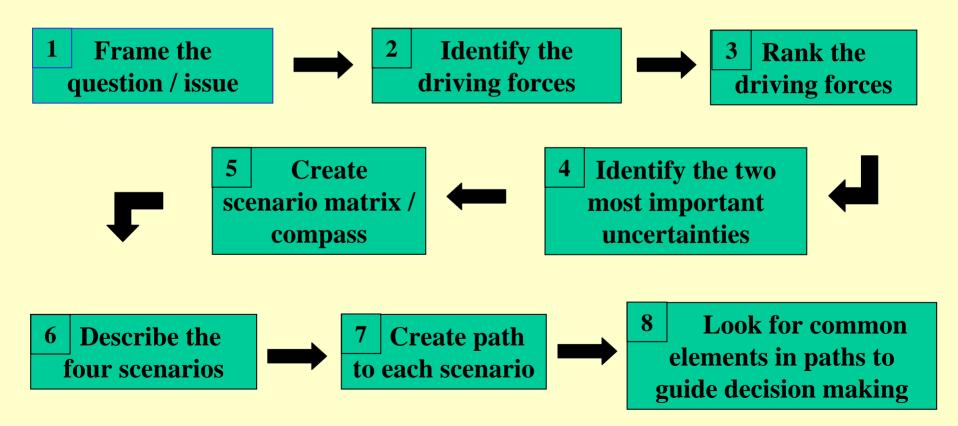
How to Guarantee a Bad Outcome

- Make water cheaper for people who use a lot
- Require water conservation only for new or large scale withdrawls
- Don't bother to track implementation of water conservation plans
- Discourage use of recycled water for anything except irrigation
- Allow big water users to opt out of municipal water systems
- Don't worry too much about ground water quality
 just
 pump it and deliver it

The Parallel Universe Rule

The best way to plan for the future is to plan for multiple futures

Conceptual Framework: Scenario Planning Process



Greater Cincinnati Water Works Scenario Planning

GOOD ECONOMY

Another one bites the dust

Happily ever after doesn't just happen

ANTI-GOVERNMENT (PRIVATE)

Waterloo

A water odyssey

PRO-GOVERNMENT

Greater Cincinnati Water Works Decision Making in Water Quality

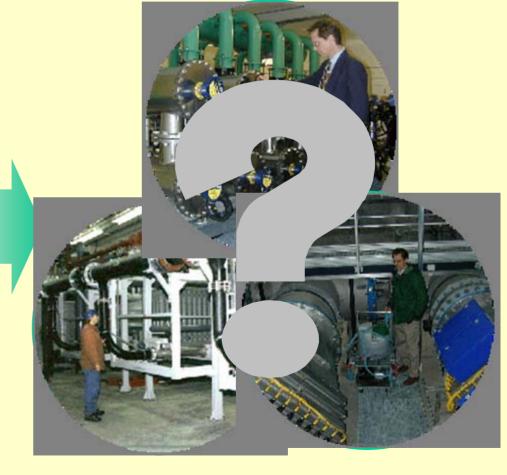
GOOD ECONOMY **Happily Another one** ever after bites the doesn't just dust happen ANTI-GOVERNMENT A water Waterloo odyssey

BAD ECONOMY

(PRIVATE)

PRO-

GOVERNMENT



Tucson Water's Clearwater Planning Compass

"Engineering "No Fear" Rules" "Recharge Only" "Recharge Plus"

The Perspective Rule

The best way to see what is in front of you is to look at it from multiple perspectives

Triple Bottom Line Concept

- ECONOMIC impacts on the economic circumstances of an organization's stakeholders and on economic systems at all levels
- ENVIRONMENTAL impacts on living and non-living natural systems, including ecosystems, land, air, and water
- SOCIAL impacts on the social systems within which the organization operates

Environmental Bottom Line Objectives of Sydney Water

- Conserve water supplies and prevent the need for new dams
- Maximize beneficial use of treated wastewater
- Manage storm water systems to minimize pollution
- Minimize waste and maximize reuse, recovery, and recycling of waste products

Social Bottom Line Objectives From Sydney Water

- Protect public health by supplying safe drinking water
- Ensure that all customers have fair and affordable access to essential services
- Promote equal employment opportunity
- Protect the health, safety, and welfare of all employees, contractors, and others who may be affected by our facilities

Projected Losses from Water Service Interruption

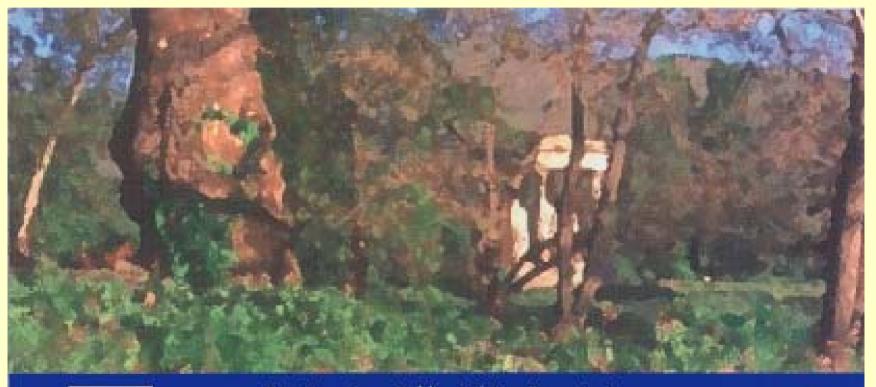
	San Andreas Fault 7.9 mag.	Hayward Fault 7.1 mag.
Residential losses Business losses	\$3.8	\$1.5
Manufacturing	\$4.35	\$3.45
Wholesale/retail	\$7.70	\$5.60
Professional/scientific/technical	\$1.60	\$0.63
Lodging/food services	\$0.54	\$0.20
Total Business losses	\$14.2	\$9.90
Fire Damage (inadequate water suppli	es) \$10.7	\$5.8
TOTAL ESTIMATED COSTS BILLIONS OF DOLLARS	\$28.7	\$17.2

Source: Bay Area Economic Forum 2002



Watershed Field Manuals

Procedures for Protecting Watershed Lands





San Francisco Public Utilities Commission
Peninsula and Alameda Watershed Field Manual:
Procedures for Protecting Watershed Lands



Unnecessary Dams Which Obstruct Fish Passage



Alternatives Analysis & Evaluation Criteria

Hydraulics

ROW

Geotechnical

Route & Alignment

Project Coordination

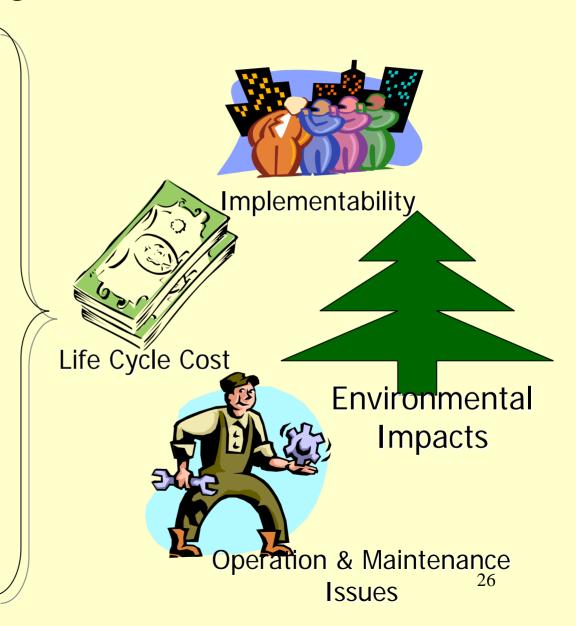
Environmental

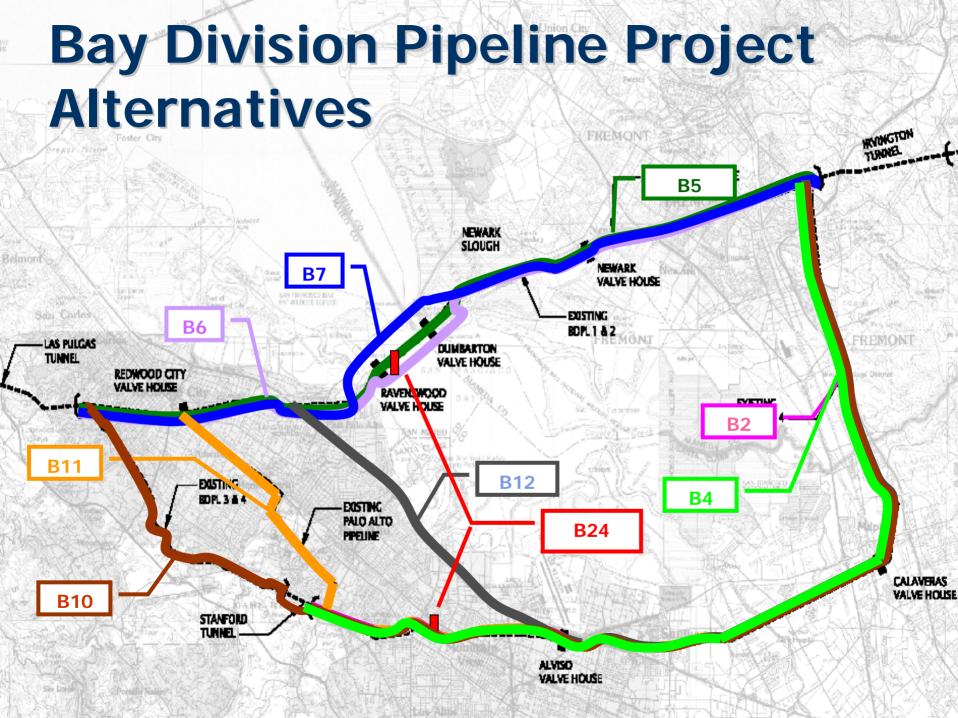
O&M Philosophy

Schedule

Cost

GIS

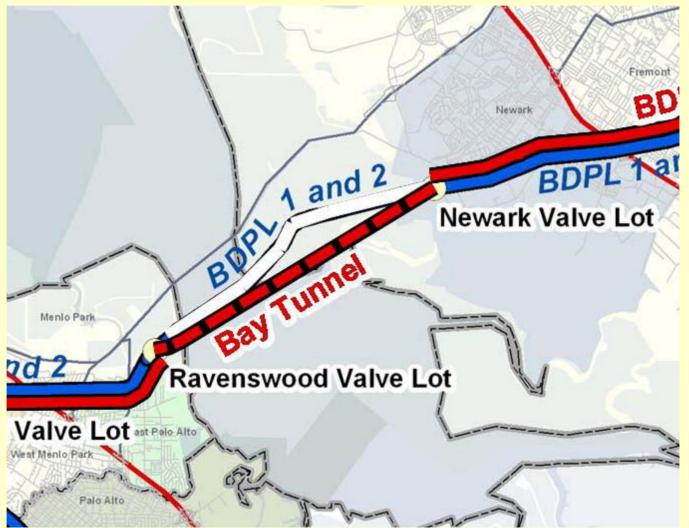




Endangered Species in Environmentally Sensitive Area



Preferred Engineering Alternative



Water Supply Planning

	Current, mgd	Future, mgd
Demand	260	300
Firm Supply	223	223
Deficit	37	77

Community Enhancement

- Does the project provide beneficial uses to the community (e.g., improve aesthetics, utilize existing structures, provide local recreational opportunities)?
- Will the project support environmental justice?
- Does the project provide special educational opportunities or opportunities to promote the City's environmental stewardship?
- Will the project be a good neighbor to communities where it is located?

Water Enterprise of San Francisco Public Utilities Commission

	Water Conservation	Groundwater	Recycled Water	Desalination	Rationing During Drought	
Affordability	+	+			✓	
Reliability	+	\checkmark	✓	✓		+ More Favorable
Responsible Management of Entrusted Resources	+	✓	+		+	✓ Moderately Favorable Less Favorable

Environmental Benefits of Recycled Water

- Protects aquatic species by avoiding diversions of streams & rivers
- Can be used to restore wetlands and other natural habitats
- Can eliminate or reduce overdraft of groundwater supplies
- Avoids degradation of receiving waters

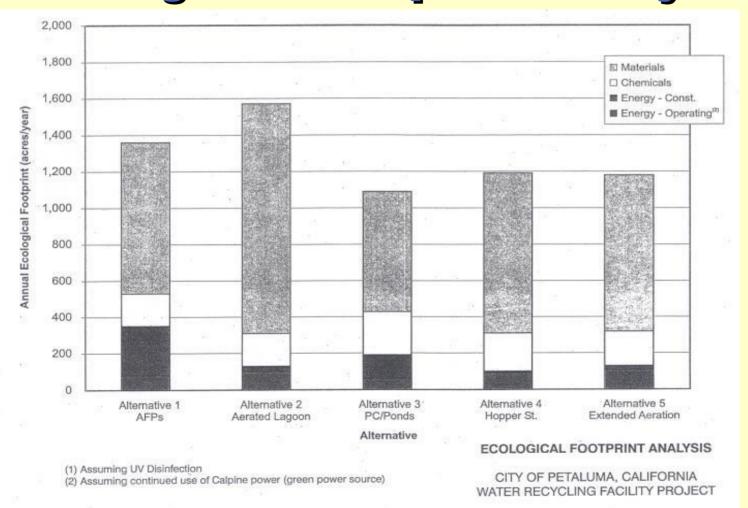
Water Conservation vs Water Recycling?

- Any new water supply may be viewed as growth inducing
- Recycled water projects involve construction of infrastructure, and ongoing use of power and chemicals
- Environmental justice issues

Environmental Analysis Tools

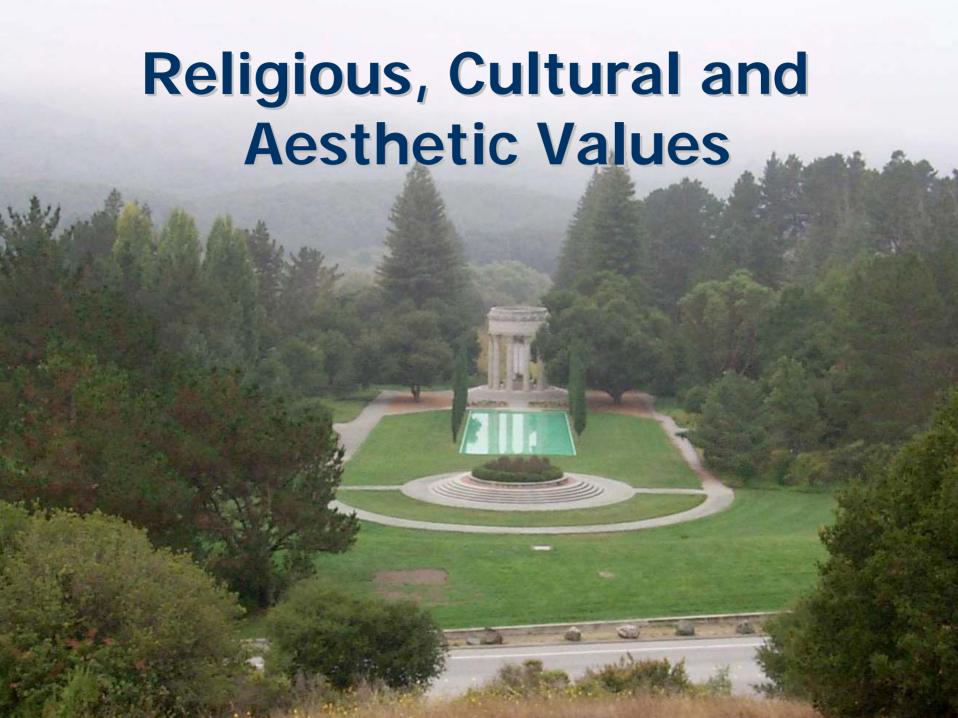
- The Natural Step™
- The Ecological Footprint
- The Leadership in Environmental Design (LEED™) Green Building Rating System

City of Petaluma 2000 Ecological Footprint Analysis



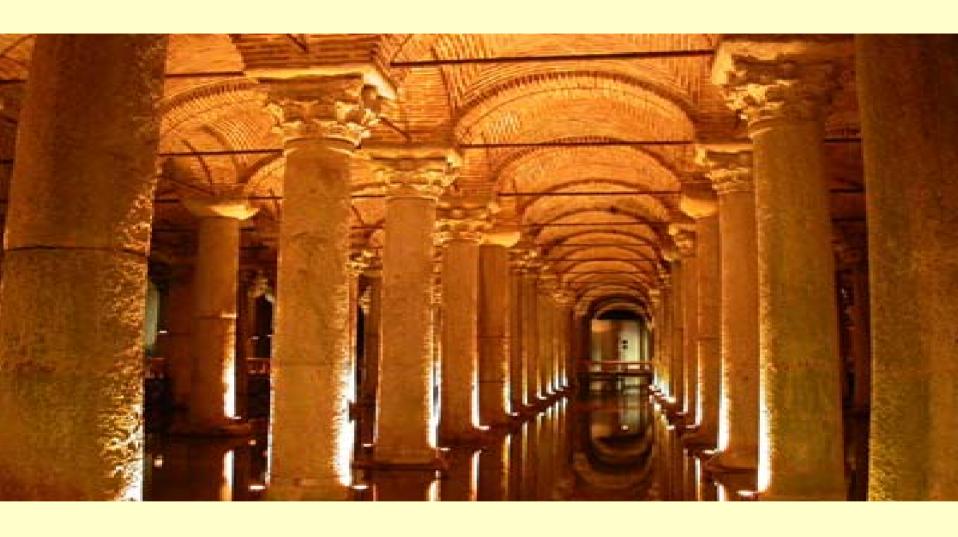
Common Mistakes in Public Involvement

- Using scientific jargon that is incomprehensible to the public
- Providing marketing messages that do not address valid concerns
- Taking comments without really listening
- Waiting to get input until a plan is already drafted
- Being unwilling to either acknowledge or express values

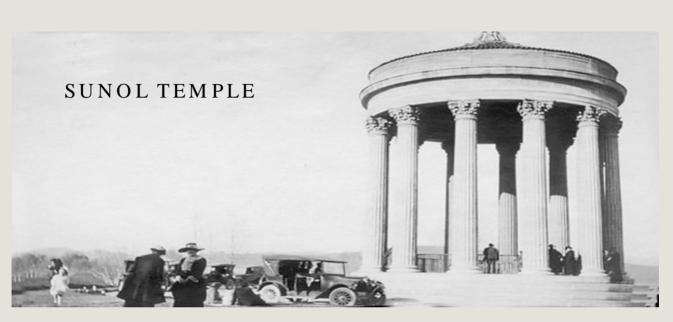


Yemanja





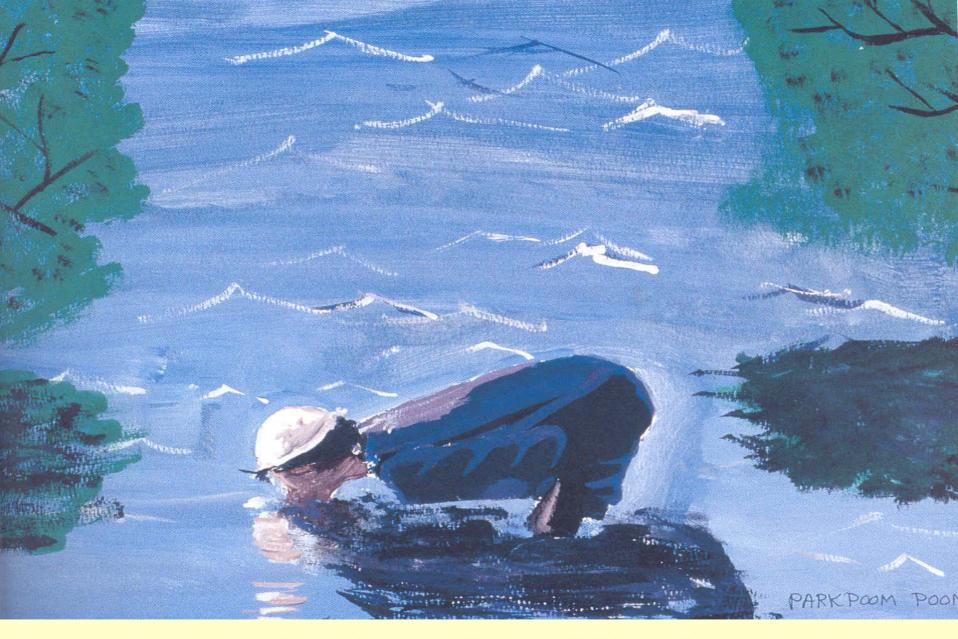
Basilica Cistern in Istanbul 40



Constructed by Spring Valley Water Company in 1910 and restored by San Francisco Public Utilities Commission in 2002

Sunol Temple

San Francisco Public Utilities Commission,



My Precious Water, I Kiss You





